

Time to Optimize Infectious Disease Screening in Pregnancy

Isabelle Boucoiran, MD, MSc;¹ Chelsea Elwood, MD, MSc;² Vanessa Poliquin, MD, MSc;³ for the SOGC Infectious Disease Committee

¹Department of Obstetrics and Gynecology, Université de Montréal, Montréal, QC

²Department of Obstetrics and Gynecology, University of British Columbia, Vancouver, BC

³Department of Obstetrics and Gynecology, University of Manitoba, Winnipeg, MB

Historically, national recommendations have advised that universal screening for HIV, syphilis, hepatitis B, and rubella serostatus be performed once each pregnancy, typically at the first prenatal visit.^{1,2} This approach has been shown to be effective in reducing HIV, syphilis, and hepatitis B infections and their associated costs. Primarily intended to prevent congenital infection, it also directly benefits the pregnant person through identification and engagement in treatment. However, Canadian epidemiology (i.e., syphilis and HIV) is evolving, vaccination uptake (influenza, pertussis, and COVID-19) during pregnancy is improving, and new management approaches are being identified (i.e., cytomegalovirus screening). It's time to take a critical look at the present state and optimize our approach, tailoring screening to personal risk factors, vaccine history, and local epidemiology.

The approach to routinely addressing infectious diseases during pregnancy should be comprehensive and aim to (1) identify risk for congenital or perinatal infection, (2) offer primary or secondary prevention to the fetus or newborn, (3) aid in diagnosis and treatment for the pregnant person, and (4) assess vaccination needs relevant to the reproductive health of the pregnant person.

Below is a list of proposed strategies:

- **Rubella and varicella:** Tailor serologic screening for immunity based on vaccine or medical history. Those with a history of natural infection or vaccination (2 lifetime doses of rubella-containing vaccine or 1 lifetime dose of varicella-containing vaccine) do not require serological screening to confirm immunity. If evidence of immunity cannot be confirmed based on vaccination status, prior infection, or serostatus, provide counselling for postpartum vaccination.³

- **Hepatitis B virus (HBV):** If hepatitis B surface antigen (HBsAg) is established as negative and the patient has evidence of immunity based on serologic evidence (presence of HBs antibodies) or vaccination history, do not repeat HBsAg screening. For uninfected pregnant patients who have no history of vaccination nor positive HBs antibodies, offer HBV vaccine during pregnancy.⁴
- **Hepatitis C virus (HCV):** Offer HCV screening at each pregnancy unless the patient is already known for positive HCV antibodies. If a pregnant patient is found to have a detectable HCV virus, pregnancy is an important opportunity to ensure they are engaged with specialist care for HCV treatment in the postpartum period.
- **Cytomegalovirus (CMV):** First trimester CMV serological screening for immunoglobulin (Ig)G and IgM, plus IgG avidity if both are positive, can identify a pregnant patient whose fetus is at risk of congenital CMV infection.⁵ Do not repeat screening if the patient is already known to be IgG positive.
- **Syphilis, HIV, gonorrhea, and chlamydia:** Depending on local epidemiology, universal rescreening for these sexually transmitted infections at 28 weeks and at delivery may be more appropriate than a risk factor-based approach for enhanced screening.
- **Parvovirus and toxoplasmosis:** For most regions in Canada, routine screening is not indicated.

Corresponding author: Isabelle Boucoiran,
isabelle.boucoiran@umontreal.ca

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Pregnancy is a unique opportunity to screen for infection and provide counselling on vaccination, in particular to vulnerable populations that have otherwise little access to prevention strategies and those who are travelling during pregnancy. Moreover, women expect their perinatal care providers to provide them with timely information so that they can make an informed choice regarding pregnancy risks, for example, for congenital cytomegalovirus infection.

The approach outlined above is in line with the “Choosing Wisely” campaign. Unnecessary serologic testing each pregnancy, such as rubella or parvovirus, can trigger unnecessary tests, treatments, and repeat vaccinations, which do not add value to care but can potentially expose patients to harm and stress. These unnecessary tests also strain the resources of our already overwhelmed health care system.

Implementing the proposed pragmatic strategies, in line with our clinical guidelines, should decrease the cost of

screening and improve maternal diagnosis and immunization rates. The responsibility of perinatal care providers goes beyond pregnancy care to women’s health overall, with pregnancy being an ideal time to engage women in preventive health care.

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